

## Refine Search

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### Search Results -

Terms	Documents
L7 and L6	35

Database:

US Pre-Grant Publication Full-Text Database  
 US Patents Full-Text Database  
 US OCR Full-Text Database  
 EPO Abstracts Database  
 JPO Abstracts Database  
 Derwent World Patents Index  
 IBM Technical Disclosure Bulletins

Search:

L8

Refine Search

Recall Text

Clear

Interrupt

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### Search History

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DATE: Monday, September 27, 2004    [Printable Copy](#)    [Create Case](#)

**Set Name Query**  
side by side

**Hit Count Set Name**  
result set

*DB=USPT; PLUR=YES; OP=AND*

<u>L8</u>	L7 and l6	35	<u>L8</u>
<u>L7</u>	L6 and precocious or attenuated	51487	<u>L7</u>
<u>L6</u>	L5 and oocysts	136	<u>L6</u>
<u>L5</u>	L4 and acervulina and maxima and mitis and tenella	151	<u>L5</u>
<u>L4</u>	L3 and l2	788	<u>L4</u>
<u>L3</u>	L2 and vaccin? or composition	720452	<u>L3</u>
<u>L2</u>	eimeria	866	<u>L2</u>
<u>L1</u>	5055292	6	<u>L1</u>

END OF SEARCH HISTORY

Ref	Items	Index-term
E1	0	*AU=MCDUGALD, L
E2	17	AU=MCDUGALD, L R
E3	1	AU=MCDUGALD, L.
E4	1	AU=MCDUGALD, L. E.
E5	2	AU=MCDUGALD, L. L.
E6	7	AU=MCDUGALD, L. R
E7	203	AU=MCDUGALD, L. R.
E8	146	AU=MCDUGALD, L.R.
E9	10	AU=MCDUGALD, LARRY R
E10	27	AU=MCDUGALD, LARRY R.
E11	7	AU=MCDUGALD, LARRY R. (ED)
E12	3	AU=MCDUGALD, LARRY ROBERT

Enter P or PAGE for more

? p

Ref	Items	Index-term
E13	4	AU=MCDUGALD, M.
E14	1	AU=MCDUGALD, M.K.
E15	1	AU=MCDUGALD, N K
E16	7	AU=MCDUGALD, N.
E17	31	AU=MCDUGALD, N. K.
E18	26	AU=MCDUGALD, N.K.
E19	2	AU=MCDUGALD, NEIL
E20	6	AU=MCDUGALD, NEIL K
E21	10	AU=MCDUGALD, NEIL K.
E22	2	AU=MCDUGALD, S. DIANE
E23	1	AU=MCDUGALD, S.D.
E24	2	AU=MCDUGALD, SUSAN DIANE

Enter P or PAGE for more

? s e6-e12

>>>One or more prefixes are unsupported  
>>> or undefined in one or more files.

7	AU=MCDUGALD, L. R
203	AU=MCDUGALD, L. R.
146	AU=MCDUGALD, L.R.
10	AU=MCDUGALD, LARRY R
27	AU=MCDUGALD, LARRY R.
7	AU=MCDUGALD, LARRY R. (ED)
3	AU=MCDUGALD, LARRY ROBERT

S14 401 E6-E12

? rd

>>>Duplicate detection is not supported for File 398.  
>>>Duplicate detection is not supported for File 654.  
>>>Duplicate detection is not supported for File 390.  
>>>Duplicate detection is not supported for File 349.  
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>>>Duplicate detection is not supported for File 652.  
>>>Duplicate detection is not supported for File 452.  
>>>Duplicate detection is not supported for File 286.  
>>>Duplicate detection is not supported for File 124.

>>>Records from unsupported files will be retained in the RD set.

...examined 50 records (50)  
...examined 50 records (100)  
...examined 50 records (150)  
...examined 50 records (200)  
...examined 50 records (250)  
...examined 50 records (300)  
...examined 50 records (350)

>>>Record 266:291225 ignored; incomplete bibliographic data, not retained -  
in RD set

>>>Record 266:276899 ignored; incomplete bibliographic data, not retained -

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in RD set
...examined 50 records (400)
...completed examining records
  S15      248  RD (unique items)
? s s15 and eimeria
      248  S15
      54178 EIMERIA
  S16      192  S15 AND EIMERIA
? s s16 not py>2002
>>>One or more prefixes are unsupported
>>> or undefined in one or more files.
Processing
Processed 30 of 60 files ...
Completed processing all files
      192  S16
      30847550 PY>2002
  S17      189  S16 NOT PY>2002
? s s17 and acervulina and maxima and mitis and tenella
      189  S17
      6379  ACERVULINA
      184742 MAXIMA
      12374  MITIS
      31843  TENELLA
  S18      6  S17 AND ACERVULINA AND MAXIMA AND MITIS AND TENELLA
? ds

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Set	Items	Description
S1	54178	EIMERIA
S2	10159	S1 AND OOCYSTS
S3	10159	S1 AND S2
S4	2966	S3 AND SPORULATED
S5	541902	S4 AND PRECOCIOUS OR ATTENUATED
S6	206	S5 AND S4
S7	160	RD (unique items)
S8	129	S7 NOT PY>2002
S9	669822	S8 AND VACCIN? OR IMMUNIZ?
S10	123	S9 AND S8
S11	123	RD (unique items)
S12	77	S11 AND ACERVULINA AND MAXIMA AND MITIS AND TENELLA
S13	77	RD (unique items)
S14	401	E6-E12
S15	248	RD (unique items)
S16	192	S15 AND EIMERIA
S17	189	S16 NOT PY>2002
S18	6	S17 AND ACERVULINA AND MAXIMA AND MITIS AND TENELLA

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? t s18/3,ab/1-6
>>>No matching display code(s) found in file(s): 65, 124, 129, 158, 180,
342, 345, 390, 398, 452, 624

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18/3,AB/1      (Item 1 from file: 50)
DIALOG(R)File 50:CAB Abstracts
(c) 2004 CAB International. All rts. reserv.

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03974927  CAB Accession Number: 20002220470
  %Eimeria% brunetti and %Eimeria% necatrix in chickens of Argentina and
confirmation of seven species of %Eimeria%.
  Mattiello, R.; Boviez, J. D.; McDougald, L. R.
  Department of Histology, Faculty of Veterinary Science, University of
Buenos Aires, Buenos Aires, Argentina.
  Avian Diseases volume 44 (3): p.711-714
  Publication Year: 2000
  ISSN: 0005-2086 --
  Language: English Summary Language: spanish
  Document Type: Journal article
  Ten poultry farms (broiler breeder pullets, layer pullets and broilers)
in the provinces of Entre Rios and Buenos Aires, Argentina, were examined
for %Eimeria% spp. Litter samples obtained from 7- to 11-week-old flocks
were examined for oocyst and sporulation, and then concentrated for
inoculation into coccidia-free chickens. Species were identified by

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prepatent period, oocyst size, location and appearance of lesions in the intestine, microscopic examination of mucosal smears and histology (to confirm *E. brunetti*). *E. praecox* was found in 2 samples, *E. %mitis%* in 2, *E. %acervulina%* in 9, *E. %maxima%* in 7, *E. necatrix* in 3, *E. %tenella%* in 7, and *E. brunetti* in 4. 8 reference

18/3,AB/2 (Item 2 from file: 50)  
DIALOG(R)File 50:CAB Abstracts  
(c) 2004 CAB International. All rts. reserv.

03676413 CAB Accession Number: 990801002

Residual activity of anticoccidial drugs in chickens after withdrawal of medicated feeds.

McDougald, L. R.; Seibert, B. P.

Department of Poultry Science, University of Georgia, Athens, GA 30602, USA.

Veterinary Parasitology volume 74 (2/4): p.91-99

Publication Year: 1998

ISSN: 0304-4017 --

Language: English

Document Type: Journal article

Eight anticoccidial drugs commonly used in poultry (diclazuril, monensin, salinomycin, halofuginone, nicarbazin, robenidine, amprolium and lasalocid) were tested for residual activity after withdrawal. In each test, the products were given at the recommended level to cages of 10 broiler chickens. Oral inoculation with coccidia was given after withdrawal of medication. Birds pretreated with 1 ppm of diclazuril and inoculated with *%Eimeria%* *%tenella%* after drug withdrawal had normal weight gain and very low lesion scores. Residual activity depleted gradually over several days, as shown by higher lesion scores when medication was withdrawn for up to 3 days before inoculation. Similar results were observed when young birds were inoculated with a mixture of *E. %tenella%*, *E. %maxima%* and *E. %acervulina%*, and also when birds were given diclazuril to market weight (6 weeks of age) and inoculated with a mixture of 6 species of *%Eimeria%* (the above species plus *E. brunetti*, *E. %mitis%*, and *E. necatrix*) after withdrawal of medication for 2 days. In contrast, there was no evidence of residual anticoccidial activity with nicarbazin, halofuginone, lasalocid, amprolium, salinomycin or monensin. Overall, the residual activity was unique to diclazuril. 14 reference

18/3,AB/3 (Item 3 from file: 50)  
DIALOG(R)File 50:CAB Abstracts  
(c) 2004 CAB International. All rts. reserv.

03533630 CAB Accession Number: 982206577

A survey of coccidia on 43 poultry farms in Argentina.

McDougald, L. R.; Fuller, L.; Mattiello, R.

Department of Poultry Science, University of Georgia, Athens, GA 30602, USA.

Avian Diseases volume 41 (4): p.923-929

Publication Year: 1997

ISSN: 0005-2086 --

Language: English Summary Language: spanish

Document Type: Journal article

Faecal samples from 43 broiler and breeder farms in the Entre Rios and Buenos Aires districts of Argentina were examined for coccidia. 38 samples were positive by microscopic examination after salt flotation, with counts of 138 to 415 800 oocysts per gram of faeces. Samples were aerated for 2 days and inoculated into 21-day-old chicks for determination of prepatent period. *%Eimeria%* *praecox* was conclusively identified in 56% of the samples by producing typical oocysts (17 x 21 micro m) in the faeces by 83-90 h after inoculation (PI). *E. %mitis%* was detected in 67% of the samples, producing typical oocysts (14 x 15.5 micro m) before 95 h PI. Typical oocysts of *E. %maxima%* (20 x 30 micro m) and/or typical lesions in the midgut upon PM examination 5-6 days PI were detected in 42% of the samples. *E. %tenella%* was suspected in 24 of 43 samples on the basis of oocyst size but was confirmed in 6 samples (14%) at PM examination of

infected birds with typical lesions in the caeca (haemorrhage, coagulated blood in the lumen, and thickened caecal mucosa). Characteristic lesions of *E. %acervulina%* and ovoid oocysts (14 x 18 micro m) were detected in all 40 positive samples (93%). Lesions in the lower small intestine of birds inoculated with 2 of the samples (5%) were typical of *E. brunetti*. These results confirmed the presence of 6 species of coccidia in Argentine poultry (all except *E. necatrix*, which is known from previous reports) and identified a prevalence and intensity for *E. praecox* and *E. %mitis%* that were previously unreported. 24 reference

18/3,AB/4 (Item 4 from file: 50)  
DIALOG(R)File 50:CAB Abstracts  
(c) 2004 CAB International. All rts. reserv.

02413565 CAB Accession Number: 912251351

Anticoccidial efficacy of diclazuril against recent field isolates of *%Eimeria%* from commercial poultry farms.

McDougald, L. R.; Mathis, G. F.; Seibert, B. P.  
Department of Poultry Science, University of Georgia, Athens, GA 30602, USA.

Avian Diseases volume 34 (4): p.911-915

Publication Year: 1990

ISSN: 0005-2086 --

Language: English

Document Type: Journal article

The anticoccidial efficacy of diclazuril, a novel anticoccidial agent, was titrated in laboratory experiments using field isolates of *%Eimeria%*. Fifty tests were conducted with 6 individual species isolates, and 7 tests were done with a mixture of the 6 species. Results were based on intestinal lesion scores PM, droppings scores, and weight gain. Diclazuril at 0.5 ppm was almost completely effective against *E. %tenella%*, *E. %acervulina%*, and *E. %mitis%*. Prevention of *E. brunetti* was better at 1.0 ppm than at 0.5 ppm. In birds infected with *E. %maxima%*, diclazuril at 0.5-1.5 ppm significantly reduced lesion scores and droppings scores and improved weight gain, although lesion scores were higher than with other species. Oocyst shedding by *E. %maxima%* was almost completely prevented by 0.5-1.5 ppm. Lesion scores and droppings scores caused by *E. necatrix* or mixed infections were greatly reduced by 0.5 ppm of diclazuril, but 1.0 ppm was necessary to obtain full protection of weight gain. These results suggest that 1.0 ppm of diclazuril prevents coccidiosis caused by 6 species of coccidia in chickens. 10 reference

18/3,AB/5 (Item 5 from file: 50)  
DIALOG(R)File 50:CAB Abstracts  
(c) 2004 CAB International. All rts. reserv.

02243226 CAB Accession Number: 900863305

Analysis of coccidian oocyst populations by means of flow cytometry.

Fuller, A. L.; McDougald, L. R.

Department of Poultry Science, University of Georgia, Athens, GA 30602, USA.

Journal of Protozoology volume 36 (2): p.143-146

Publication Year: 1989

ISSN: 0022-3921 --

Language: English

Document Type: Journal article

Flow cytometry was employed as a tool to analyze and characterize batches of oocysts from laboratory and field isolates of *%Eimeria%* spp. (*E. %tenella%*, *E. %acervulina%*, *E. %maxima%*, *E. necatrix* and *E. praecox*) from chickens and to propagate sub-populations of batches of oocysts. Oocyst batches were cleaned of debris by a combination of salt flotation, washing and treatment with dilute sodium hypochlorite (1.5% aqueous). Oocyst size and shape were registered by forward-angle light scatter with the argon laser excitation set at 488 nm at 300 mW. Sub-populations of oocysts were collected by map gating and used for microscopy or for propagation. The profile of particle size was characteristic for each species. Propagation of sub-populations of oocysts of specified sizes

resulted in cultures of coccidia that were pure species or nearly pure species. The small size of *E. mitis* caused difficulty in separation from the remaining fine debris. This technique was useful for studying the variation in oocyst size within populations and characterization of field isolates of mixed species. Propagation of pure species from mixed isolates by bit-map gating had the same limitations as micromanipulation because of the overlapping size of *Eimeria* spp. Characterization is further limited by the lack of suitable size/shape standards for flow cytometry. 12 reference

18/3,AB/6 (Item 1 from file: 10)

DIALOG(R) File 10:AGRICOLA

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3874132 22076825 Holding Library: AGL

*Eimeria* brunetti and *Eimeria* necatrix in chickens of Argentina and confirmation of seven species of *Eimeria*

Mattiello, R. Boviez, J.D.; McDougald, L.R.

Kennett Square, Pa. : American Association of Avian Pathologists Inc.

Avian diseases. July/Sept 2000. v. 44 (3) p. 711-714.

ISSN: 0005-2086 CODEN: AVDIAI

DNAL CALL NO: 41.8 Av5

Language: English Summary Language: Spanish

Ten poultry farms (broiler breeder pullets, layer pullets, and broilers) in the provinces of Entre Rios and Buenos Aires in Argentina were examined for presence of *Eimeria* spp. Litter samples obtained from flocks 7-11 wk old were taken to the laboratory for oocyst counting and sporulation, then concentrated for inoculation into coccidia-free chickens. Species were identified by prepatent period, oocyst size, location and appearance of lesions in the intestine, microscopic examination of mucosal smears, and histology (to confirm *Eimeria* brunetti). On this basis, *Eimeria* praecox was found into two samples, *Eimeria* mitis in two, *Eimeria* acervulina in nine, *Eimeria* maxima in seven, *Eimeria* necatrix in three, *Eimeria* tenella in seven, and *E. brunetti* in four. These results confirm the presence of all seven recognized species of *Eimeria* in chickens in the Republic of Argentina.

?

or more prefixes are unsupported

>>> or undefined in one or more files.

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1 AU=FULLER, ALBERTA
1 AU=FULLER, ALBERTA L.
2 AU=FULLER, ALBERTA LORRAINE
S20 4 E10-E12
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? rd

>>>Duplicate detection is not supported for File 398.  
>>>Duplicate detection is not supported for File 654.  
>>>Duplicate detection is not supported for File 390.  
>>>Duplicate detection is not supported for File 349.  
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>>>Duplicate detection is not supported for File 452.  
>>>Duplicate detection is not supported for File 286.  
>>>Duplicate detection is not supported for File 124.

>>>Records from unsupported files will be retained in the RD set.

...completed examining records

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S21 3 RD (unique items)
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? t s21/3,a/1-3

>>>'A' not a valid format name

? t s1/3,ab/1-3

>>>No matching display code(s) found in file(s): 65, 124, 129, 158, 180,  
342, 345, 390, 398, 452, 624

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1/3,AB/1 (Item 1 from file: 398)
DIALOG(R)File 398:Chemsearch
(c) 2004 Amer.Chem.Society All rts. reserv.
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CAS REGISTRY NUMBER: 651802-61-8

MOLECULAR FORMULA: Unknown

CA NAME(S):

HP=Dehydrogenase, mannitol 1-phosphate (Eimeria tenella gene mlpdh)  
(9CI)

SYNONYMS: 6: PN: WO2004009114 SEQID: 6 claimed protein

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1/3,AB/2 (Item 2 from file: 398)
DIALOG(R)File 398:Chemsearch
(c) 2004 Amer.Chem.Soc. All rts. reserv.
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CAS REGISTRY NUMBER: 651802-60-7

MOLECULAR FORMULA: Unknown

CA NAME(S):

HP=DNA (Eimeria tenella gene mlpdh mannitol-1-phosphate dehydrogenase  
cDNA) (9CI)

SYNONYMS: 5: PN: WO2004009114 SEQID: 5 claimed DNA

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1/3,AB/3 (Item 3 from file: 398)
DIALOG(R)File 398:Chemsearch
(c) 2004 Amer.Chem.Soc. All rts. reserv.
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CAS REGISTRY NUMBER: 625176-48-9

MOLECULAR FORMULA: Unknown

CA NAME(S):

HP=Protein (Eimeria tenella apicoplast-encoded open reading frame orfG)  
(9CI)

SYNONYMS: GenBank AAO40249; GenBank AAO40249 (TRANSLATED FROM: GenBank  
AY217738); Protein (Eimeria tenella chloroplast-encoded open reading  
frame orfG)

?

>>> or undefined in one or more files.

3 AU=FULLER, A  
1 AU=FULLER, A LORRAINE  
2 AU=FULLER, A. L  
21 AU=FULLER, A. L.  
6 AU=FULLER, A. LORRAINE

S22 33 E1, E5, E21-E23

? rd

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>>>Records from unsupported files will be retained in the RD set.

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S23 23 RD (unique items)

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>>>No matching display code(s) found in file(s): 65, 124, 129, 158, 180,  
342, 345, 390, 398, 452, 624

23/3,AB/1 (Item 1 from file: 50)

DIALOG(R)File 50:CAB Abstracts

(c) 2004 CAB International. All rts. reserv.

04574594 CAB Accession Number: 20033215405

Apicoplast genome of the coccidian *Eimeria tenella*.

Cai, X. M.; Fuller, A. L.; McDougald, L. R.; Zhu, G.

Department of Veterinary Pathobiology, College of Veterinary Medicine,  
College Station, TX 77843-4467, USA.

Gene vol. 321 p 39-46

Publication Year: 2003

ISSN: 0378-1119

Language: English

Document Type: Journal article

Unicellular apicomplexans possess an algal-originated plastid referred to as an apicoplast. Although apicomplexan parasites are comprised of highly diverse protists, the complete apicoplast genome sequences have only been determined from the hematozoan *Plasmodium falciparum* and cyst-forming coccidian *Toxoplasma gondii*. Here, we report the third complete sequence of apicoplast genome from the intestinal coccidian *Eimeria tenella* that may serve as a new drug target against coccidiosis in the livestock. The AT-rich *E. tenella* plastid genome is a 35-kb circular element. Its gene organization resembles more closely that of *T. gondii* than *P. falciparum*. Although the *E. tenella* plastid genome contains an almost identical set of genes to that found in *P. falciparum* and *T. gondii*, its encoded genes share low or moderate homologies with their counterparts in the other two apicomplexans. With the addition of this coccidian plastid genome sequence, we attempted to reexamine the apicoplast genome evolution and performed phylogenetic reconstructions using maximum likelihood and Bayesian inference (BI) methods based on a concatenated dataset of plastid-encoded *rpoB*, *rpoC1* and *rpoC2* proteins. All resulting *rpo* protein trees placed apicoplast as a sister to *Euglena* within the green lineage. On the other hand, many recent studies based on the organization of plastid genes and some nuclear-encoded plastid proteins have supported a common red algal ancestry of apicomplexan and dinoflagellate plastids. If the apicoplast indeed originated from a red ancestor, the green relationship of apicomplexan genes would probably imply that the ancestral host that gave rise to the (red) apicoplast might have already contained some primary green plastid genes. 30 ref.



23/3,AB/2 (Item 2 from file: 50)  
DIALOG(R)File 50:CAB Abstracts  
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04186987 CAB Accession Number: 20023029207

Lectin-binding by sporozoites of *Eimeria tenella*.

Fuller, A. L.; McDougald, L. R.

Department of Poultry Science, University of Georgia, Athens, GA 30602,  
USA.

Parasitology Research vol. 88 (2): p.118-125

Publication Year: 2002

ISSN: 0932-0113 --

Language: English

Document Type: Journal article

Sporozoites of *Eimeria tenella* were reacted in vitro with 19 different lectins characterized with a variety of carbohydrate-binding properties. Nine lectins caused sporozoite agglutination, which was inhibited by the specific carbohydrates mannose, sialic acid, melibiose, D-galactose, or D-galNAc. When intact live or fixed whole sporozoites were reacted with fluorescein isothiocyanate-conjugated lectins, another nine lectins bound to sporozoites, giving weak to strong fluorescence but not agglutination. Of these, all nine lectins bound to surface sites, but four also bound to the refractile body. Two of the agglutinating lectins also bound to intracellular organelles of air-dried sporozoites. SDS-PAGE analysis showed that biotinylated lectins bound a wide variety of parasite proteins. Lectins with similar carbohydrate specificities had some similarity in binding patterns of parasite proteins, as well as marked differences. In a few cases lectins with different carbohydrate specificities bound common protein bands. Only one lectin (*Dolichos biflorus*) showed no evidence of binding to whole sporozoites, organelles, or proteins. 19 ref.

23/3,AB/3 (Item 3 from file: 50)  
DIALOG(R)File 50:CAB Abstracts  
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04074248 CAB Accession Number: 20013095891

Cell membrane labeling of *Eimeria tenella* sporozoites with the fluorescent dye PKH-67 GL for tracking parasite-host interactions.

Fuller, A. L.; McDougald, L. R.

Department of Poultry Science, University of Georgia, Athens, GA 30602,  
USA.

Parasitology Research vol. 87 (7): p.521-525

Publication Year: 2001

ISSN: 0932-0113 --

Language: English

Document Type: Journal article

The fluorescent cell linker dye PKH-67 GL was used as a vital stain for sporozoites of *Eimeria tenella* for tests on viability, invasion of cultured primary chick kidney cells, flow cytometric analysis and fluorescence microscopy. The effect of PKH-67 GL on sporozoites was tested at a range of concentrations of dye and sporozoites. In flow cytometric analysis,  $0.5-40 \times 10^{-6}$  M of PKH-67 GL labelled sporozoites to some degree, with the percentage of labelled sporozoites increasing with higher dye concentrations. The optimum concentration was  $2 \times 10^{-6}$  M, allowing easy observation by fluorescence microscopy. Morphological changes in the sporozoite at concentrations greater than  $5 \times 10^{-6}$  M were accompanied by loss of viability according to a propidium iodide inclusion assay. Sporozoite penetration of primary chick kidney cells was unaffected by the optimal level of  $2 \times 10^{-6}$  M, allowing observation of intracellular activities. Overall, the cell linker dye greatly facilitated observation of *E. tenella* in vitro and in flow cytometric analysis. 9 ref.

23/3,AB/4 (Item 4 from file: 50)  
DIALOG(R)File 50:CAB Abstracts  
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03623451 CAB Accession Number: 980807035

Biological effects of gamma-irradiation on laboratory and field isolates of *Eimeria tenella* (Protozoa; Coccidia).

Gilbert, J. M.; Fuller, A. L.; Scott, T. C.; McDougald, L. R.

Department of Poultry Science, University of Georgia, Athens, GA 30602, USA.

Parasitology Research vol. 84 (6): p.437-441

Publication Year: 1998

ISSN: 0044-3255 --

Language: English

Document Type: Journal article

Sporulated oocysts of a field strain (FS-111) and a laboratory strain (WIS) of *Eimeria tenella* were exposed to 0, 50, 100, 150 or 200 Gy of gamma-radiation from a <sup>60</sup>Co source. Irradiated oocysts of WIS and FS-111 were not significantly more fragile after irradiation as shown by the release of sporocysts after 5-105 seconds of vortex agitation with glass beads. Excystation was normal in both strains after treatment of the sporocysts with trypsin and sodium taurodeoxycholate, even in groups exposed to 200 Gy of radiation. Sporozoite release from irradiated sporocysts was more rapid than that from nonirradiated sporocysts, primarily because of a shorter lag phase during the first 30 minutes. Irradiated sporozoites were slower to parasitize cultured chick kidney cells than were control sporozoites (4 h pi), but after 24 h there was no significant difference ( $P < 0.05$ ) between irradiated and control groups except for the WIS treated with 200 Gy. After 48 h, developing schizonts were reduced by 77-94% on exposure to 50-200 Gy. Strain FS 111 did not develop as well as WIS in vitro, but the effect of irradiation was similar. When irradiated oocysts of WIS or FS-111 were inoculated into chickens the prepatent period was unaffected, but fewer oocysts were produced, lesion scores were lower, and the weight gain was less strongly affected in proportion to the doses of radiation. It is suggested that the effects of radiation damage were largely confined to the mechanism of nuclear and cellular reproduction rather than other physiological processes. 16 ref.

23/3,AB/5 (Item 5 from file: 50)

DIALOG(R)File 50:CAB Abstracts

(c) 2004 CAB International. All rts. reserv.

03226488 CAB Accession Number: 960803093

Flow cytometric analysis of the response of *Eimeria tenella* (Coccidia) sporozoites to coccidiocidal effects of ionophores.

Fuller, A. L.; Golden, J.; McDougald, L. R.

Department of Poultry Science, University of Georgia, Athens, Georgia 30602, USA.

Journal of Parasitology vol. 81 (6): p.985-988

Publication Year: 1995

ISSN: 0022-3395 --

Language: English

Document Type: Journal article

Fluorescein diacetate (FDA) and propidium iodide (PI) were used as indicators of membrane integrity after *Eimeria tenella* sporozoites were treated with polyether ionophores. Flow cytometry was used to quantitate the structural and functional effects based on red or green fluorescence and shape index of the sporozoites. Two field isolates (FS119 and FS139) were essentially resistant to polyether ionophores administered under practical conditions, whereas a laboratory strain was considered sensitive. The shape of sporozoites changed after treatment with ionophores, and this could be detected by flow cytometry. Green-fluorescing cells declined in number as the membranes were compromised by ionophore treatment. Red-fluorescing cells increased as the compromised membranes allowed entry of PI to bind with the nucleic acids. These effects were generally slower to develop in ionophore-tolerant field isolates compared with the sensitive laboratory strain. The effect of lasalocid on FDA and PI uptake, change in shape of the sporozoites, and lysis of sporozoites was more rapid than that of monensin or salinomycin. The 2 field isolates responded at different rates to salinomycin and

monensin. Flow cytometry was a sensitive and accurate instrument for analysis of the effects of ionophores on sensitive and resistant lines of coccidia. 13 ref.

23/3,AB/6 (Item 6 from file: 50)  
DIALOG(R)File 50:CAB Abstracts  
(c) 2004 CAB International. All rts. reserv.

03042513 CAB Accession Number: 951407455

Effect of dietary raw soybeans on coccidiosis in chickens.

Mathis, G. F.; Dale, N. M.; Fuller, A. L.

Georgia Poultry Research, Inc., 2011 Brock Rd., Athens, Georgia 30607, USA.

Poultry Science vol. 74 (5): p.800-804

Publication Year: 1995

ISSN: 0032-5791 --

Language: English

Document Type: Journal article

The effect of feeding raw soybeans (RSB) in maize-soyabean diets on coccidiosis in broiler chickens was studied in a 2 x 3 factorial arrangement of treatments with 0, 50 and 100% RSB and chickens infected or uninfected (5 experiments). Coccidial species tested singly were *Eimeria acervulina*, *E. maxima*, *E. necatrix*, *E. brunetti* and *E. tenella*. With all species of *Eimeria*, a significant diet by infection interaction was demonstrated with a stepwise increase in weight gain and a decrease in lesion scores with increasing levels of RSB. The 100% RSB diets was given for an extended period in experiment 6, to induce pancreatic hypertrophy and hyperfunction. Feeding regimens were 0% RSB (day 0 to termination), 0% RSB day 0 to 12, then 100% RSB to termination, and 100% RSB day 0 to termination (treatments A-C) and chickens infected (*E. tenella*) or uninfected (groups 1-3). There was a significant difference for weight gain between uninfected and infected chicks of groups 1 and 3 but this difference was absent in group B. Coccidiosis was not decreased by continuous feeding of 100% RSB. 11 ref.

23/3,AB/7 (Item 7 from file: 50)  
DIALOG(R)File 50:CAB Abstracts  
(c) 2004 CAB International. All rts. reserv.

02675289 CAB Accession Number: 932280313

Effects of *Eimeria brunetti* infection and dietary zinc on experimental induction of necrotic enteritis in broiler chickens.

Baba, E.; Fuller, A. L.; Gilbert, J. M.; Thayer, S. G.; McDougald, L. R.

Department of Veterinary Medicine, College of Agriculture, University of Osaka Prefecture, Sakai, Osaka 591, Japan.

Avian Diseases vol. 36 (1): p.59-62

Publication Year: 1992

ISSN: 0005-2086 --

Language: English Summary Language: spanish

Document Type: Journal article

In 3 trials, using 80 birds each, broilers infected with *E. brunetti* and given dietary Zn were examined for experimental induction of necrotic enteritis, (*Clostridium perfringens* infection, which is difficult to establish experimentally without such concurrent factors). Inoculation with sporulated *E. brunetti* oocysts at 7 days of age was followed by 5 consecutive days of oral inoculation with cultured *C. perfringens*. Feed was supplemented with Zn at 1000 ppm. At PM examination 6 days after coccidial inoculation, necrotic enteritis was found in 20% (2/10) of birds given both organisms and dietary Zn. Coccidial lesion scores were also highest in that group. Birds infected with *E. brunetti* and *C. perfringens* with no dietary Zn had significantly higher coccidiosis lesion scores than groups inoculated with *E. brunetti* only, regardless of Zn supplementation. Alpha toxin levels in intestinal contents were low in groups infected with both organisms, regardless of Zn supplementation. Zinc was tested for effects on alpha toxin production in vitro. In the mid-log phase (6 h incubation), a high level of alpha toxin was produced in Zn-supplemented media, but this was lost quickly in the presence of trypsin. Addition of

Zn partly protected the toxin from the action of trypsin. 20 ref.

23/3,AB/8 (Item 8 from file: 50)  
DIALOG(R)File 50:CAB Abstracts  
(c) 2004 CAB International. All rts. reserv.

02404777 CAB Accession Number: 910871141

Testing anticoccidials in vitro: a machine readable, colorimetric variation of ELISA.

Gilbert, J. M.; Fuller, A. L.; McDougald, L. R.  
Department of Poultry Science, University of Georgia, Athens, GA 30602, USA.

Conference Title: Coccidia and intestinal coccidiomorphs. Proceedings of the 5th International Coccidiosis Conference. Tours (France), 17-20 October 1989.

p.253-258

Publication Year: 1989

Publisher: INRA Service des Publications -- Versailles, France

ISBN: 2-7380-0164-5

Language: English

Document Type: Conference paper

A variation on the ELISA was established for use as an in vitro screening technique for anticoccidial drugs. Primary chicken kidney (PCK) cells were cultured in 96-well microtitre plates. 48 h later, the PCK cells were treated with the coccidiostats monensin, lasalocid, nicarbazin, amprolium, or no drug for controls, and were infected with sporozoites of *Eimeria tenella* (Wis strain), and were cultured for 48 h longer. Lysis buffer was added to all wells, the plates were incubated for 2 h at 41 deg C, and a normal ELISA procedure was followed. Results indicate that this procedure was useful for evaluating the effectiveness of coccidiostats in preventing the proliferation of coccidial stages in the PCK cells. 7 ref.

23/3,AB/9 (Item 9 from file: 50)  
DIALOG(R)File 50:CAB Abstracts  
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02404773 CAB Accession Number: 910871137

Host cell invasion by *Eimeria tenella*: effects of protease inhibitors on invasion in vitro.

Fuller, A. L.; McDougald, L. R.  
Department of Poultry Science, University of Georgia, Athens, GA 30602, USA.

Conference Title: Coccidia and intestinal coccidiomorphs. Proceedings of the 5th International Coccidiosis Conference. Tours (France), 17-20 October 1989.

p.231-234

Publication Year: 1989

Publisher: INRA Service des Publications -- Versailles, France

ISBN: 2-7380-0164-5

Language: English

Document Type: Conference paper

The potential role of proteases in the invasion of chick kidney cells by *E. tenella* (WIS strain) was studied using various protease inhibitors (Antipain, TPCK, TLCK, pepstatin, leupeptin, aprotinin and PMSF). Primary chick kidney cells cultured for 60 hours, were infected with treated sporozoites, or incubated with protease inhibitors and sporozoites. Intracellular sporozoites were counted using fluorescent antibody techniques. The number of intracellular sporozoites were reduced by 21-83% by treatment of sporozoites or cells with antipain, pepstatin, leupeptin, aprotinin, TPCK or TLCK. Phenylmethyl sulfonyl fluoride reduced cell penetration by 30-83% at 1-4 mM. 4 ref.

23/3,AB/10 (Item 10 from file: 50)  
DIALOG(R)File 50:CAB Abstracts  
(c) 2004 CAB International. All rts. reserv.

02374157 CAB Accession Number: 912217638

Efficacy of maduramicin ammonium against coccidiosis in turkeys under laboratory and floor-pen conditions.

McDougald, L. R.; Fuller, A. L.; Mathis, G. F.; Wang, G. T.  
Department of Poultry Science, University of Georgia, Athens, GA 30602, USA.

Avian Diseases vol. 34 (3): p.634-638

Publication Year: 1990

ISSN: 0005-2086 --

Language: English Summary Language: spanish

Document Type: Journal article

Experimental infections with field isolates of *Eimeria meleagridis*, *E. adenoeides*, *E. gallopavonis*, and *E. dispersa* in turkey ~~poult~~s were used to test the efficacy of maduramicin ammonium at 2.5-10 ppm in laboratory experiments. Infection with single or mixed species of coccidia reduced the weight gain of unmedicated infected controls and caused 18.1-65% mortality in two experiments. Maduramicin ammonium given at 5-7 ppm prevented mortality, significantly reduced droppings scores and oocyst passage, and improved weight gain to near that of the unmedicated uninfected controls. Maduramicin ammonium was tested at 4-7 ppm in a floor-pen trial lasting 10 weeks. Mortality from coccidiosis averaged 11.9% in unmedicated controls, compared with 0.6% with 4 ppm of maduramicin or no mortality with 5-7 ppm. Average weight gain and feed conversion at 10 weeks were significantly improved over unmedicated infected controls when maduramicin ammonium was given at 5-7 ppm. 9 ref.

23/3,AB/11 (Item 11 from file: 50)

DIALOG(R)File 50:CAB Abstracts

(c) 2004 CAB International. All rts. reserv.

02326484 CAB Accession Number: 902212906

An outbreak of *Eimeria necatrix* coccidiosis in breeder pullets: analysis of immediate and possible long-term effects on performance.

McDougald, L. R.; Fuller, A. L.; McMurray, B. L.  
Department of Poultry Science, University of Georgia, Athens, Georgia 30604, USA.

Avian Diseases vol. 34 (2): p.485-487

Publication Year: 1990

ISSN: 0005-2086 --

Language: English Summary Language: spanish

Document Type: Journal article

Coccidiosis caused by *Eimeria necatrix* was diagnosed in a flock of 17 640 broiler breeder pullets at 18 weeks of age on a new farm. Mortality and morbidity were excessive in both hens and males, resulting in 10.1% fewer hens capitalized and 15.56% fewer males. Egg production was lower by 4.51% during weeks 30-40 of age in comparison with other flocks of about the same age. Estimates of the cost of replacement of death losses and culls, the direct effect on the cost of the flock, and the increased cost of production amounted to \$27 234. 3 ref.

23/3,AB/12 (Item 12 from file: 50)

DIALOG(R)File 50:CAB Abstracts

(c) 2004 CAB International. All rts. reserv.

02320366 CAB Accession Number: 900867924

A new method for purification of *Eimeria tenella* merozoites.

Xie, M. Q.; Gilbert, J. M.; Fuller, A. L.; McDougald, L. R.  
Veterinary Medicine Institute, Guangdong Academy of Agricultural Science, China.

Parasitology Research vol. 76 (7): p.566-569

Publication Year: 1990

ISSN: 0044-3255 --

Language: English

Document Type: Journal article

A rapid and simple method for purifying 2nd generation merozoites of *E. tenella* was developed using a host tissue digestion fluid, containing 0.25% trypsin and 0.5% taurodeoxycholic acid, to liberate merozoites grown

in chick embryos or from parasitized caeca. After filtration, the digestion procedure yielded  $1.4 \times 10^7$  or  $8.33 \times 10^7$  merozoites/embryo or caecum, respectively. These yields were 9-fold (for embryos) and 3-fold (for caeca) those obtained previously. Viability of the merozoites was normal as assessed by their ability to reinfect embryos and cell cultures. The new method has advantages in that large numbers of pure, viable merozoites can be obtained quickly and easily, and the procedures require minimal effort and supplies. 17 ref.

23/3,AB/13 (Item 13 from file: 50)  
DIALOG(R)File 50:CAB Abstracts  
(c) 2004 CAB International. All rts. reserv.

02320350 CAB Accession Number: 900867901

Reduction in cell entry of *Eimeria tenella* (Coccidia) sporozoites by protease inhibitors, and partial characterization of proteolytic activity associated with intact sporozoites and merozoites.

Fuller, A. L.; McDougald, L. R.

Department of Poultry Science, University of Georgia, Athens, GA 30602, USA.

Journal of Parasitology vol. 76 (4): p.464-467

Publication Year: 1990

ISSN: 0022-3395 --

Language: English

Document Type: Journal article

The role of proteases in the invasion of host cells by *E. tenella* (Wisconsin strain) was studied in vitro. Protease inhibitors were used to treat sporozoites before inoculation or were applied to cultured chicken kidney cells before infection. The inhibitors antipain, leupeptin, aprotinin, L-1-tosylamide-2-phenyl-ethyl chloromethyl ketone (TPCK), or N-alpha -p-tosyl-L-lysine chloromethyl ketone (TLCK) reduced parasite invasion to 16-66% of control after treatment of cultured cells or sporozoites with 5 or 50 micro g/ml concentrations of inhibitors in the culture medium. Phenylmethylsulfonyl fluoride (PMSF) reduced invasion to 32-57.7% at concentrations of 1-4 mM. The optimum pH for hydrolysis of azocasein by intact sporozoites or merozoites was determined over a range of pH 5.0 to pH 9.0. Sporozoites were highly active over a broad range from pH 5.5 to pH 9.0, with an apparent optimum at pH 8.0. Merozoites had a much lower specific activity with pH optima at 7.0 and 8.5. The protease activity of sporozoites or merozoites could be inhibited completely by the addition of 50 micro g/ml of leupeptin, TPCK, or TLCK or of 4 mM PMSF. Antipain inhibited proteases of sporozoites but not of merozoites. Pepstatin had little effect on either sporozoites or merozoites. The results suggest that parasite proteases of *Eimeria* may be necessary for invasion of host cells. 14 ref.

23/3,AB/14 (Item 14 from file: 50)  
DIALOG(R)File 50:CAB Abstracts  
(c) 2004 CAB International. All rts. reserv.

02243226 CAB Accession Number: 900863305

Analysis of coccidian oocyst populations by means of flow cytometry.

Fuller, A. L.; McDougald, L. R.

Department of Poultry Science, University of Georgia, Athens, GA 30602, USA.

Journal of Protozoology vol. 36 (2): p.143-146

Publication Year: 1989

ISSN: 0022-3921 --

Language: English

Document Type: Journal article

Flow cytometry was employed as a tool to analyze and characterize batches of oocysts from laboratory and field isolates of *Eimeria* spp. (*E. tenella*, *E. acervulina*, *E. maxima*, *E. necatrix* and *E. praecox*) from chickens and to propagate sub-populations of batches of oocysts. Oocyst batches were cleaned of debris by a combination of salt flotation, washing and treatment with dilute sodium hypochlorite (1.5% aqueous). Oocyst size and shape were registered by forward-angle light scatter with the argon

laser excitation set at 488 nm at 300 mW. Sub-populations of oocysts were collected by map gating and used for microscopy or for propagation. The profile of particle size was characteristic for each species. Propagation of sub-populations of oocysts of specified sizes resulted in cultures of coccidia that were pure species or nearly pure species. The small size of *E. mitis* caused difficulty in separation from the remaining fine debris. This technique was useful for studying the variation in oocyst size within populations and characterization of field isolates of mixed species. Propagation of pure species from mixed isolates by bit-map gating had the same limitations as micromanipulation because of the overlapping size of *Eimeria* spp. Characterization is further limited by the lack of suitable size/shape standards for flow cytometry. 12 ref.

23/3,AB/15 (Item 15 from file: 50)  
DIALOG(R)File 50:CAB Abstracts  
(c) 2004 CAB International. All rts. reserv.

02025301 CAB Accession Number: 880850627  
Epidemiology and anticoccidial sensitivity of coccidia strains isolated from broiler farms in the US: a survey of 99 field isolates.  
Fuller, A. L.; McDougald, L. R.; Solis, J.  
Dep. Poultry Sci., Univ. Georgia, GA, USA.  
Conference Title: Research in avian coccidiosis. Proceedings of the Georgia Coccidiosis Conference, 18-20 November 1985  
p.348-352  
Publication Year: 1986  
Editors: McDougald, L.R.; Joyner, L.P.; Long, P.L.  
Publisher: University of Georgia College of Agriculture -- Athens, Georgia 30602, USA  
Language: English  
Document Type: Conference paper

In a nationwide survey in the USA, the sensitivity of 99 isolates of *Eimeria* to 4 coccidiostats was evaluated. A total of 177 strains was isolated; the predominant species were *E. acervulina* (which accounted for 51.9% of the total and was found in 11 of 12 states), *E. maxima* (27%, 8 states), *E. tenella* (15.8%, 10 states) and *E. brunetti* (5.6%, 6 states). One, 2, 3 and 4 species were found in 41.4, 39.4, 18.2 and 1.0% of the isolates respectively. Nicarbazin at 125 ppm gave the best overall anticoccidial efficacy, followed by salinomycin, monensin and amprolium plus ethopabate. The results confirmed that many of the coccidia were resistant to some degree to commonly used coccidiostats. 1 ref.

23/3,AB/16 (Item 1 from file: 10)  
DIALOG(R)File 10:AGRICOLA  
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984538 779085252  
Vegetable marketing and production in Columbia, Suwannee, Hamilton and Madison counties [Florida]  
%Fuller, A%; Andrew, C O  
Proc Fla State Hortic Soc May 1, 1977 89: 111-115.  
LC: 81 F66  
Language: English

23/3,AB/17 (Item 1 from file: 185)  
DIALOG(R)File 185:Zoological Record Online(R)  
(c) 2004 BIOSIS. All rts. reserv.

0001902581 BIOSIS No. 14003014829  
Apicoplast genome of the coccidian *Eimeria tenella*.  
AUTHORS: Cai, Xiaomin; %Fuller, A. Lorraine%; McDougald, Larry R.; Zhu, Guan (a  
AUTHORS ADDRESS: (a) Department of Veterinary Pathobiology, College of Veterinary Medicine, College Station, TX, 77843-4467; USA  
SOURCE: Gene (Amsterdam) 321, 4 December 2003: 39-46. [Print]  
DOCUMENT TYPE: Article

ISSN: 0378-1119  
LANGUAGES: English SUMMARY LANGUAGES: English  
RECORD TYPE: Abstract

ABSTRACT: Unicellular apicomplexans possess an algal-originated plastid referred to as an apicoplast. Although apicomplexan parasites are comprised of highly diverse protists, the complete apicoplast genome sequences have only been determined from the hematozoan *Plasmodium falciparum* and cyst-forming coccidian *Toxoplasma gondii*. Here, we report the third complete sequence of apicoplast genome from the intestinal coccidian *Eimeria tenella* that may serve as a new drug target against coccidiosis in the livestock. The AT-rich *E. tenella* plastid genome is a 35-kb circular element. Its gene organization resembles more closely that of *T. gondii* than *P. falciparum*. Although the *E. tenella* plastid genome contains an almost identical set of genes to that found in *P. falciparum* and *T. gondii*, its encoded genes share low or moderate homologies with their counterparts in the other two apicomplexans. With the addition of this coccidian plastid genome sequence, we attempted to reexamine the apicoplast genome evolution and performed phylogenetic reconstructions using maximum likelihood and Bayesian inference (BI) methods based on a concatenated dataset of plastid-encoded *rpoB*, *rpoC1* and *rpoC2* proteins. All resulting *rpo* protein trees placed apicoplast as a sister to *Euglena* within the green lineage. On the other hand, many recent studies based on the organization of plastid genes and some nuclear-encoded plastid proteins have supported a common red algal ancestry of apicomplexan and dinoflagellate plastids. If the apicoplast indeed originated from a red ancestor, the green relationship of apicomplexan genes would probably imply that the ancestral host that gave rise to the (red) apicoplast might have already contained some primary green plastid genes.

23/3,AB/18 (Item 2 from file: 185)  
DIALOG(R) File 185:Zoological Record Online(R)  
(c) 2004 BIOSIS. All rts. reserv.

0001340959 BIOSIS Number 13300008918  
Flow cytometric analysis of the response of *Eimeria tenella* (Coccidia) sporozoites to coccidiocidal effects of ionophores.  
AUTHORS: %Fuller, A. Lorraine% (a); Golden, J.; McDougald, L.R  
AUTHORS ADDRESS: (a) Department of Poultry Science, University of Georgia, Athens, Georgia 30602; USA  
SOURCE: Journal of Parasitology 81(6), December 1995:985-988. [Print]  
DOCUMENT TYPE: Article  
ISSN: 0022-3395  
LANGUAGES: English SUMMARY LANGUAGES: English  
RECORD TYPE: Citation

23/3,AB/19 (Item 1 from file: 399)  
DIALOG(R) File 399:CA SEARCH(R)  
(c) 2004 American Chemical Society. All rts. reserv.

86039111 CA: 86(7)39111n JOURNAL  
Evaluation of "Chemocolumn" method for creatine kinase MB  
AUTHOR(S): Fuller, A. L.; Kendrick, F. E.  
LOCATION: Clin. Lab., Anaheim Mem. Hosp., Anaheim, Calif.  
JOURNAL: Clin. Chem. (Winston-Salem, N. C.) DATE: 1976 VOLUME: 22  
NUMBER: 12 PAGES: 2059-60 CODEN: CLCHAU LANGUAGE: English

23/3,AB/20 (Item 1 from file: 143)  
DIALOG(R) File 143:Biol. & Agric. Index  
(c) 2004 The HW Wilson Co. All rts. reserv.

1406636 H.W. WILSON RECORD NUMBER: BBAI01048224  
Body temperature patterns during natural fevers in a herd of free-ranging impala (*Aepyceros melampus*)  
Kameraman, P. R  
%Fuller, A%; Faurie, A. S



23/3,AB/21 (Item 1 from file: 484)  
DIALOG(R)File 484:Periodical Abs Plustext  
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00402738  
The "Help Your Patient Stop" Initiative  
Fowler, G; %Fuller, A%; Mant, D; Jones, L  
Lancet (GLAN), n8649, p1253-1255, p.3  
Jun 3, 1989  
ISSN: 0023-7507 JOURNAL CODE: GLAN  
DOCUMENT TYPE: Feature  
LANGUAGE: English RECORD TYPE: Abstract  
LENGTH: Long (31+ col inches)

ABSTRACT: The World Health Organization and the International Agency  
against Cancer in 1988 published joint guidelines on smoking cessation for  
primary health care professionals. A booklet entitled "Help Your Patient  
Stop" was produced in the UK, and sent to general practitioners. The  
booklet had only minimal impact.

23/3,AB/22 (Item 1 from file: 6)  
DIALOG(R)File 6:NTIS  
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0148068 NTIS Accession Number: AD-672 242/XAB  
Thermonuclear Detonation Wave Structure  
%Fuller, A. L. %; Gross, R. A.  
Columbia Univ New York  
Corp. Source Codes: 088850  
Report Number: AFOSR-68-1603  
28 Jun 68 14p  
Document Type: Journal article  
Journal Announcement: USGRDR6818  
Pub. in The Physics of Fluids, v11 n3 p534-544 Mar 68. Order this product  
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(other countries); fax at (703)321-8547; and email at  
orders@ntis.fedworld.gov. NTIS is located at 5285 Port Royal Road,  
Springfield, VA, 22161, USA.

NTIS Prices: PC A02/MF A01  
The structure of a very strong detonation wave (a shock wave followed by  
a thermonuclear reaction zone) propagating through a deuterium-tritium gas  
mixture is studied. The shock is sufficiently strong so that it heats the  
gas to a temperature at which thermonuclear reaction probabilities are  
large. The characteristic times for collisions and reactions are examined  
to determine when the von Neumann-Zeldovich model (separate shock and  
reaction zone) of detonation structure is applicable. Appropriate nuclear  
reaction kinetics equations are developed for the reaction zone and the  
effect of energy loss due to bremsstrahlung is included in the analysis. A  
set of wave structure equations is derived and solved numerically for  
several different cases. The physical effects expected from a laboratory  
fast-shock experiment are examined briefly. (Author)

23/3,AB/23 (Item 2 from file: 6)  
DIALOG(R)File 6:NTIS  
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0108472 NTIS Accession Number: AD-488 251/XAB  
Thermonuclear Shock Wave Structure  
(Technical rept)  
%Fuller, A. L. %  
Columbia University, New York. Plasma Laboratory  
Report Number: TR-31; AFOSR-66-2051  
Jul 66 151p

Journal Announcement: USGRDR6701

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NTIS Prices: PC A08/MF A01

The structure of a very strong shock wave propagating through a deuterium-tritium gas mixture and a pure tritium gas is studied. The temperature behind the shock wave is sufficiently high so that thermonuclear reaction probabilities are large. The wave structure is similar to that of detonations in chemically reacting gases. It is assumed that the characteristic times for collisions and reactions are such that the von Neumann-Zeldovich model of detonations is applicable; i.e., the shock can be treated as a viscous gas dynamic shock followed by a deflagration wave inside of which all the reactions occur. The physical and mathematical assumptions involved in the analysis of thermonuclear shock wave structure are examined. The reaction probabilities for deuterium and tritium fusion reactions are computed and the appropriate reaction kinetics equations are developed. The effect of energy losses due to bremsstrahlung on the wave structure is considered for a gas that is optically thin to radiation of all frequencies. The resulting set of structure equations are solved numerically for several physically interesting cases. The neutron flux and power output due to reactions is calculated for a shock propagating in an electromagnetically driven shock tube filled with a mixture of deuterium and tritium. A power of 1 kw/per cubic centimeter is predicted under specified operating conditions. (Author)

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